

Index

>>& 6-10, 6-11
? 6-18, 7-6
@ 9-6
[] 6-17
\ 6-3, 6-17, 9-4, 9-5, 15-13
^ 6-17, 9-6
^- 9-7
^> 9-7
_ 7-5
| 4-4, 6-10, 6-11, 6-13, 9-5
|| 9-5
~ 7-2, 7-4, 9-11, 15-16
' 9-4

Symbols

5-7
! 6-3, 6-7
- 7-5
!! 6-7
!\$ 6-7
!? 6-7
!?text? 6-7
!n 6-7
!text 6-7
" 6-17, 9-4
5-6, 9-6
#! 5-6
\$ 1-5, 5-3, 6-3, 6-5, 6-7, 6-17, 9-4, 9-9, 9-10, 9-11
% 1-5, 5-3, 6-20, 6-21
& 6-19, 9-5
&& 9-5
* 6-17, 7-6
+ 6-18
, 7-5
. 5-7, 6-17, 7-1, 7-2, 7-4, 7-5, 9-12, 9-18
. 6-17
.. 7-1, 7-2, 7-4, 7-5, 7-21
/ 5-6, 9-12
.cshrc file 1-5, 5-7, 7-5, 7-27, 9-8, 9-15, 9-17
use with AFS 8-3
.emacs file 10-6
initialization file (emacs and xemacs) 10-6
.flpprc file 11-4
.login file 1-5, 6-9, 7-5, 9-2, 9-6, 9-15, 9-16, 9-17
use with AFS 8-3, 8-4
.logout file 3-7, 7-5, 9-15, 9-17
.mailcap file 4-8, 9-19
format 9-19
.plan file 4-11
.profile file 1-5, 6-9, 7-27, 9-2, 9-6, 9-17, 9-18
use with AFS 8-3
.shrc file 1-5, 5-2, 5-6, 5-7, 9-17, 9-18
use with AFS 8-3
/ 7-1, 7-2, 7-4, 7-5, 9-4
/etc/krb5.conf file 3-3
use with login program 3-3
; 9-5
< 6-10, 6-11
> 6-10, 6-11
>! 6-10, 6-11
>& 6-10, 6-11
>&! 6-10, 6-11
>> 6-10, 6-11

A

a2ps 4-4, 11-4
Absolute pathname 7-1
Access Control Lists 8-7
Access mode 7-24
Access permission, UNIX 7-24
Access to files, lose (AFS) 8-19
ACL rights 8-7
ACLS 8-7
Add command to search path 6-9
AFS 8-1, 9-7
"busy volume" error 8-20
Access Control Lists 8-7
ACLS 8-7
add/verify/del members of group 8-14
at 6-23, 8-4
change owner of group 8-13
combination rights (ACLS) 8-7, 8-9
create protection group 8-15
cron 6-23, 8-4
destroy token 8-4
determine if installed on system 8-2
examine quota 8-6
external processes unauthenticated 6-23, 8-4
file locking issues 8-18
file permissions 8-6
file system (**fs**) command 8-5
fs command options 8-5
group name format 8-8, 8-9
help on commands 8-5
list permissions 8-8
protection groups 8-7, 8-9
predefined 8-9
protection server (**pts**) command 8-10
remove a group 8-15
remove ACLs on directory 8-9
set permissions list 8-12
show owned groups 8-12
system:administrators group 8-10
system:anyuser group 8-4, 8-10
system:authuser group 8-10
translator mode 8-2
unlog 8-4
using **find** 8-19
view current tokens 8-4
Web page permissions 4-9
AFS authentication
for subprocesses 8-3

AFS commands
 man pages 4-4
AFS permissions
 add/chg/del ACLs 8-8
 for Web pages 8-9
 list ACLs 8-8
AFS protection group
 add/verify/del members 8-14
AFS space disk areas 8-6
AFS token (see Kerberos token) 8-3
Alias 6-3
alias 6-2, 7-19, 9-14
Andrew File System 8-1
ANSI C standard 15-2
ANSI standards 15-3
answerbook 4-6
apropos 4-5
Archive file 7-14
Arguments 6-5, 15-21
Arrow keys in ksh 9-3
asa 15-15
Assembler 15-2
at 6-22
authentication
 UNIX
 kerberos login program 3-3
 standard login program 3-3
awk 6-13, 6-16, 6-17, 6-18, 15-5

B

Back quotes 9-4
Background jobs 6-18, 6-19
 output redirection 6-19
Background processes 6-2, 6-19
Backslash character 9-4, 15-13
Backspace character 9-1
Backspace key 6-6
 trouble with 9-2
bash 5-3
Batch processing
 fbatch (Fermilab interface to LSF) 13-3
 fbatch (Fermilab interface to LSF) 13-1
 FCFS (First Come First Serve protocol) 13-2
 FSS (Fair Share Scheduling) 13-2
 host machine selection under LSF 13-2
 job priority under LSF 13-2
 job release threshold 13-2
 job suspension threshold 13-2
 load index 13-2
 LSF (Load Sharing Facility) 13-1
 nice value of queue 13-2
 queues 13-2
 resources for processing jobs 13-2
 shares 13-2
 time window for jobs 13-2
Berkeley Mail 12-2
bg 6-20
Bourne shell family 5-1, 9-14
 . 9-18
 .profile 1-5
 .shrc 1-5
 /bin/sh links to ksh 5-2, 5-6, 9-17

alias 9-18
execute command to affect current shell 9-18
Fermi files 9-17
shell functions 9-14
Bourne shell variables 9-10
 define 9-10
 export to environment 9-10
Browser commands 4-10
Browsers 4-7
bufio 15-16
Built-in commands 5-4, 6-1
 help on 6-2
 platform-specific 6-2

C

C 7-3, 15-2, 15-5, 15-22
arguments 15-21
cache usage 15-19
calling FORTRAN routines 15-21
compiler options 15-8
dbx 15-23
debugging 15-11, 15-23
extern struct 15-21
external names 15-21
feedback 15-19
file extensions 15-6
floating point errors 15-18
gdb debugger 15-26
Gnu C 15-3
indexes 15-20
inlining 15-19
interfacing with FORTRAN 15-19
IRIX 6 ABI choice 15-11, 15-20
library references 15-7
link editor 15-5
linking 15-22
list active compiler options 15-7
load map 15-12
pointers 15-21
speed optimization 15-11, 15-17
variables 15-20
word length 15-18
C compilers 15-5
C language 15-2
C preprocessor 15-13
C programs 15-5
C shell family 5-1
 .cshrc 1-5
 .login 1-5
 alias 9-13
 execute commands to affect current shell 9-17
 Fermi files 9-15
 fork new process 9-15
 invoke new shell 9-15
 variables set at startup 9-9
C++ 15-2, 15-3, 15-8
ANSI standards 15-3
compiler options 15-8
dbx 15-23
debugging 15-23
file extensions 15-8
gdb debugger 15-26

ISO standards 15-3
C++ language 15-2
 Case sensitivity 15-16
 commands 6-5
 filenames 7-5
cat 6-13, 7-9, 11-6
 format 7-10
CC 15-3, 15-8
cc 15-5
cd 6-2, 7-1, 7-3, 7-21, 8-2
cedit 6-6
C-FORTRAN
 linking 15-22
 mixed I/O 15-22
Change mode 7-25
Change password 2-6
 changing your password 2-5
Character class 7-6
 Character matching 6-17, 7-6
Characters, special 7-5, 9-4, 9-5
Child process 6-2, 9-8
chmod 5-6, 7-24, 7-25, 7-27, 8-6
 absolute form 7-25
 alternate form 7-26
clear 9-15
 Clear the screen 9-15
Cluster 9-7
Code management 17-1
 concurrent development 17-1
Command arguments 6-5
 optional 6-4
Command files 5-1
Command format 6-4
Command interpretation by shell 6-3
Command interpreter 1-2
Command line editing 5-4, 6-6
Command line errors
 correct typing 6-6
Command options 6-5
Command recall 6-6
 cedit 6-6
Command separator 6-6
 & 9-5
 && 9-5
 ; 9-5
 | 9-5
 || 9-5
Commands 1-3, 6-1
 AFS 8-5
 alias 6-3
 ambiguous 7-4
 arguments 6-4, 6-5
 built-in 5-4, 6-1
 case-sensitivity 6-5
 conditional 6-5
 continue to next line 6-6
 determining executable file 7-4
 directory shortcuts 7-4
 edit 6-6
 filter 6-13
 group 6-6
 group options 6-5
 history list 5-4
 how shell finds them 6-9
 interactive 6-1
 locate via **path** variable 9-12
 looping 6-5
 option listing 4-4
 options 6-4, 6-5
 parentheses in 6-2
 platform differences 6-5
 recall 6-6
 scripted 6-1
 sequence of 5-5
 type ahead 6-6
Comparison of editors 10-2
Comparison of shells 5-3
Compilers
 C 15-5
 C++ 15-3
 FORTRAN 15-5
Completion mechanism 5-4
compress 7-16
Compression, file 7-16
Computing systems updates 4-10
Concatenate files 7-10
Concurrent Versions System 17-1
Conditional commands 6-5
Continue commands to new line 9-4
Control characters 9-1, 9-6
 backspace 9-1
 ctrl-c 9-1
 ctrl-d 9-2
 ctrl-o 9-2
 ctrl-q 9-2
 ctrl-r 9-2
 ctrl-s 9-2
 ctrl-w 9-1
 ctrl-x 9-1
 ctrl-z 9-2
 DEL 9-1
 Copy a file 7-11
 Copy to archive file 7-14
 Core file 15-23
 Correct command typos 6-6
 Count characters in file 7-19
 Count lines of file 7-19
 Count words in file 7-19
 cp 7-11, 7-12, 9-13
 format and options 7-11
 cpp 15-13
 Create a directory 7-22
 Create Web page 4-9
 cron 6-23
 crontab 6-23
 CRYPTOCard 2-1, 2-5, 3-5
 X terminal 2-1
 csh 5-3, 6-6
 reexecution commands 6-7
 ctrl-j 6-8
 ctrl-c 9-1
 ctrl-d 5-3, 6-10, 9-2
 ctrl-o 9-2
 ctrl-q 9-2
 ctrl-r 9-2
 ctrl-s 9-2
 ctrl-w 9-1
 ctrl-x 9-1
 ctrl-z 6-21, 9-2
 Current directory 7-1, 7-2, 7-5, 7-21

Current shell, determine 5-1
Customer Support 4-1
Customized code, storage of 9-18
CVS 17-1
 common commands 17-2
 documentation 17-1
 editor 17-2
cvs checkout 17-2
cvs commit 17-2
cvs export 17-2
cvs import 17-2
cvs rtag 17-2

D

DAFT 14-2, 15-16
Database manipulation 6-16
dbx 15-23
 commands 15-23
 ddd interface 15-23
 format 15-23
 GUI front ends 15-23
dd 14-4
ddd debugger interface 15-23
Debugging 15-23
 dbx 15-23
 gdb 15-26
 purify 15-26
Default shell 9-13
DEL 9-1
Delete a directory 7-14, 7-23
Delete a file 7-14
Delete key 6-6
 trouble with 9-2
Delimiters 9-5
Devices
 logical 6-10
 null 6-11, 6-13
df 8-2
Directory 4-11
 change working directory 7-21
 create 7-22
 current 7-1
 delete 7-23
 format of listing 7-9
 home 7-2, 7-3, 7-21, 15-16
 link 7-9, 7-12
 list contents 7-8, 7-21
 make 7-22
 manipulate 7-21
 mode 7-9
 move 7-23
 parent 7-21
 permissions 7-27
 AFS 8-7
 print working directory 7-21
 protection 7-24
 reference 7-12
 remove 7-23
 root 1-6, 9-4
 shortcut commands 7-2
 shortcuts 7-4
 working 7-1

Directory files 7-5
Directory permissions 7-24
 AFS 8-7
 AFS protection groups 8-9
 change 7-25
disk areas in AFS space 8-6
Display current terminal settings 9-2
Display file contents 7-9
Display multimedia files 9-19
Display output 6-14
Display status of processes 6-2
DISPLAY variable 4-7, 9-11, 10-2
Display variables
 set 9-11
Display, restart 9-2
Distributed file systems 1-6
 AFS 8-1
Domain name 4-6
domainname 9-7
Dot (in pathname) 7-2
Double quotes 6-3, 9-4
Double-sided printing 11-5
Dump a file 7-20
Duplex print mode 11-5
dxbook 4-6

E

echo 5-1, 6-3, 7-3, 7-7, 7-14, 9-9, 9-11
ed 6-17
Edit commands 6-6
Edit files, can't 8-19
Editing
 command line 5-4
 multiline 5-4
EDITOR variable 6-8
Editors 10-1, 10-2
 comparison of 10-2
EDT+ 9-3, 10-1, 10-2, 11-6
egrep 6-18
emacs 6-8, 9-3, 10-1, 10-2, 11-6
 commands 10-4
 file extension-language map 10-6
 flow control 10-6
 help facility 10-4
 initialization file 10-6
 key bindings 10-6
 pros and cons 10-2
 encrypted connection
 changing password over 2-5
End-of-file 6-10
env 5-1, 7-19, 9-9
ENV variable 9-17
Environment
 customize 9-15
Environment for UNIX process 9-8
Environment variables 9-8, 9-9
eof 3-7, 6-10, 9-2
Erase screen contents 9-15
exec 6-2
Executable files 6-9
Executables 6-1
 run from current directory 9-12

Execute a program 15-22
 Execute permission 7-9, 7-24

- directory 7-27
- file 7-24

 Execute shell script 5-7
exit 3-6, 5-3
 Exit a shell 5-3
 Exit UNIX 3-6
exmh 12-2
 Expansion, file 7-16
export 1-5, 9-10
 Expressions, regular 6-17
 Extensions on filenames 7-6
 EXTERNAL http
 [/www.fnal.gov/cd/UNIX/UnixResources.html#Code](http://www.fnal.gov/cd/UNIX/UnixResources.html#Code)
 15-1
 External names 15-21

F

f77 15-5

- option passing 15-7

fbatch

- Fermilab interface to LSF 13-3

fbatch

- Fermilab interface to LSF 13-1
- Kerberos token renewal 8-3

 Fermi files 1-4, 9-15

- Bourne shell family 9-17
 - .profile** 9-17
 - .shrc** 9-18
 - fermi.profile** 9-18
 - fermi.shrc** 9-18
- C shell family 9-15
 - .cshrc** 9-15, 9-16
 - .login** 9-15, 9-16
 - .logout** 9-15, 9-17
 - fermi.cshrc** 9-16
 - fermi.login** 9-16

 Fermi UNIX Environment 1-3

- brief description 1-3

fermi.cshrc file 9-16
fermi.login file 9-16
fermi.profile file 9-18
fermi.shrc file 9-18
 Fermilab Customer Support 4-1
 Fermilab helpdesk 4-1
 Fermilab systems-related information 4-10
fermitpu 9-3, 10-1, 10-2, 11-6
fg 6-20, 6-21
file 4-8, 7-16, 7-20

- format 7-21

 File expansion 9-5
 File locking in AFS 8-18
 File overwrite protection 9-13
 File permissions 7-24

- change 7-25
- in AFS 8-6

 File protection 7-24
 File specifications 7-5
 File systems 1-3, 1-6

- AFS 8-1
- distributed 1-6

 NIS 5-2
 primary 1-6
 root 7-1
 standard UNIX 1-6, 5-2
 File type, determine 7-20
 Filename expansion 6-3, 6-17

- turn off (in **csh**) 7-7

 Filename extensions 7-6
 Filenames 7-1, 7-5, 7-9

- extensions 7-5
- using dash (-) in 7-5

Files 7-5

- access permission 7-24
- audio 9-19
- browse 7-10
- command 5-1
- compression 7-16
- concatenate 7-10
- copy 7-11
- delete 7-14
- determine file type 7-20
- directory 7-5
- display beginning 7-10
- display contents 7-9
- display end 7-10
- dump 7-20
- executable 6-9
- expansion 7-16
- find 7-17
- hidden 7-5, 9-15
- image 9-19
- link 7-9, 7-12
- list contents 7-10
- list directory contents 7-8, 7-21
- list in reverse date order 7-8
- MIME types 9-19
- mode 7-9
- move 7-12
- ordinary 7-5
- overwrite 7-5
- print 11-1
- reference 7-12
- remove 7-14
- rename 7-12
- search contents for pattern 6-16
- search for 7-17
- searching 7-18
- set permission at file creation 7-26
- size 7-9
- sort lines in 6-16
- tar 7-16
- versions 7-5
- video 9-19

 Files, can't access 8-19
Filters 6-13

- awk** 6-16
- grep** 6-16
- less** 4-4, 6-14
- more** 6-14
- sort** 6-16

find 7-16, 7-17

- caution for AFS 8-19
- format and options 7-17

finger 4-11, 5-1

- .plan** 4-11

on the Web 4-11
FLPHOST variable 11-1
fplk 11-1
fpeq 11-1
FLPQUE variable 11-1
fpr 4-4, 11-1, 11-7
 defaults 11-4
 options 11-2
fpr.defaults file 11-4
FMB 14-2
FNALU 9-7
 AFS 8-1
 batch system (LSF) 13-1
Foreground jobs 6-18
Fork a process 6-2
Format
 command 6-4
Formatting
 man pages 4-3
FORTRAN 7-3, 15-2, 15-3, 15-5
 adding library symbol tables 15-16
 arguments 15-21
 asa 15-15
 automatic variables 15-13
 BLOCKDATA 15-16
 BLOCKDATA modules 15-14
 cache usage 15-19
 calling C routines 15-21
 carriage control characters 15-15
 character special files 15-17
 command line arguments 15-15
 COMMON 15-21
 compiler options 15-8
 compilers 15-5
 compiling files separately 15-14
 conditional compilation 15-13
 converting output to ASCII text 15-15
 copying value of variables 15-15
 cpp 15-13
 dbx 15-23
 debugging 15-11, 15-23
 environment variables 15-15
 executing a program 15-22
 external names 15-21
 external references 15-14
 extracting programs 15-14
 feedback 15-19
 file extensions 15-6
 floating point errors 15-18
 force loading of a library routine 15-16
 formatted records 15-17
 fsplit 15-14
 gdb debugger 15-26
 GETENV 15-15
 I/O 15-17, 15-22
 include files 15-13
 INCLUDE statement 15-13
 indexes 15-20
 initializing variables in COMMON 15-14
 inlining 15-19
 interfacing with C 15-19
 IRIX 6 ABI choice 15-11, 15-20
 library references 15-7
 linking 15-22
 list active compiler options 15-7
 load map 15-12
 macro expansion 15-13
 option passing 15-7
 passing options to next stage 15-7
 printing 15-15
 program execution 15-22
 record handling 15-17
 retaining local variables 15-13
 SAVE statements 15-13
 source code listing 15-12
 source inclusion 15-13
 speed optimization 15-11, 15-17
 standard input and output 15-17
 static variables 15-13
 tape files 15-17
 unformatted records 15-17
 variables 15-20
 word length 15-18
FORTRAN 90 15-15
FORTRAN-C
 linking 15-22
 mixed I/O 15-22
Forward slash character 9-4
fs listacl 8-8
fs listquota 8-6
fs setacl 8-5, 8-8
fsplit 15-14
ftp 4-6, 4-8
FTT 14-1
FUE 1-3, 1-4, 9-15
FUE description 1-3
funame 9-18

G

g++ 15-3
g77 15-5
gawk 5-7, 6-16
gcc 15-3, 15-5
 ddd debug interface 15-23
gdb 15-26
 Getting help 4-1
GNU C 15-3
GNU make 16-12
gopher 4-8
grep 5-2, 6-13, 6-16, 6-17, 7-16, 7-18, 8-2
 format and options 7-18
groff 4-3
 Group permission 7-25
 in AFS 8-7
 Grouping commands 6-6
 Groups in AFS 8-9
gtools 16-12
gunzip 7-16
gzip 7-16

H

Hard link 7-13
hash 5-6, 6-9
Hash table 5-6
head 7-9, 7-10

format and options 7-10
Help on AFS commands 4-4
Help on filenames 4-5
Help on shell commands 6-2
Helpdesk 4-1
Hidden files 7-5, 9-15
history 6-6
History list 5-4
history variable 9-16
Home directory 7-1, 7-2, 7-3, 7-21, 15-16
 ~ 9-11
HOME variable 9-11
Home page 4-8
HOME variable 7-3, 7-4, 9-11
home variable 9-9
Host name 4-6
HTML files 4-7, 4-9
http 4-8
HyperText Markup Language 4-7

I

I/O 6-13, 15-22
 C 15-22
 FORTRAN 15-22
I/O redirection 6-3, 6-10, 6-11
 failure 6-11, 6-12
 grouping 6-11, 6-13
 input 6-11
 suppress output 6-11
ignoreeof 3-7
Info 4-10
info(AIX) 4-6
Information distribution system 9-7
Inode number 7-5
Inode table 7-5
Input redirection 6-10, 6-11
Input/Output redirection 9-5
insight 4-6
Interactive command entry 6-1
Interface to LSF (fbatch) 13-3
Interfacing C and FORTRAN 15-19
Internet 4-6
 domain name 4-6
 ftp 4-6
 host name 4-6
 IP address 4-6
 mail 4-6
 navigation tools 4-6
 news 4-6
 services 4-6
 telnet 4-6
 WWW 4-6
Interpretation of commands by shell 6-3
Interpretive language
 awk 6-16
Interpretive programming language 5-1, 5-5, 5-7
Interrupt process 9-1
IP address 4-6
ISO standards 15-3

J

Jobs
 background 6-18, 6-19
 foreground 6-18
 kill 6-21
 list 6-20
 move to background 6-21
 move to foreground 6-21
 priority 6-19
 scheduling 6-22, 6-23
 start in background 6-19
 stop 6-20
 stop 6-21
 suspend 6-20, 6-21
 terminate 6-21
jobs 6-20

K

Kerberos token
 destroy 8-4
 for batch execution 8-3
 pass to subprocesses 8-3
Kernel 1-3, 5-1
Keys, special 9-1
kill 6-20, 6-21
kinit command 3-3
klog 8-19
knews 4-10
ksh 5-3
 arrow keys 9-3

L

LAN 1-6
Languages, programming 15-2
ld 15-5
less 4-4, 6-13, 6-14, 7-9, 7-20
 /pattern 6-15
 format 7-10
lex 15-5
Link directories 7-12
Link editor 15-5
Link files 7-12
Links 7-9, 7-12
 hard 7-13
 symbolic 7-13
List jobs 6-20
Literal interpretation of character 9-4
Literal string interpretation 9-4
ln 7-12
 format and options 7-12
Load map 15-12
Load Sharing Facility (LSF) 13-1
Local area network 1-6
Local interface to LSF (fbatch) 13-3
Log in 9-8
Log out 3-6, 3-7
 ctrl-d 3-7
terminate processes 3-7

logdir 7-2, 15-16
Logical devices 6-10
Login directory 7-1, 7-21
Login files 9-8, 9-15
login name 3-6
login program
 Kerberos 3-3
 kerberos 3-3
 standard UNIX 3-3
Login scripts 1-4
login without Kerberos 3-4
logout 3-6
Looping commands 6-5
lp 11-7
lpr 11-1, 11-7
ls 4-2, 6-11, 6-12, 7-5, 7-7, 7-8, 7-21, 7-24
 format and options 7-8
lynx 4-7

M

m 6-7
Macro 16-2
 format in Makefile 16-4
Magic file 7-20
Magic numbers 7-20
Mail 4-6
 reply-to address 12-6
Mail forwarding
 set on external nodes 12-6
Mail systems
 exmh 12-2
 MH 12-2
 mh 12-2
mailto 4-8
Maintain customized code 9-18
make 16-1
 \$MAKE macro 16-11
 action 16-12
 built-in rules 16-4, 16-12
 command syntax 16-9
 defaults 16-12
 environment variables 16-11
 GNU make 16-12
 list built-in macros and rules 16-12
 macro 16-2
 Makefile 16-2
 options 16-9
 remove stray files 16-10
 suffix definition 16-2
 suffix rule 16-2
 target 16-2
 use without Makefile 16-10
Makefile 16-1, 16-2, 17-1
 blank lines in 16-3
 commands and shells 16-13
 definition types 16-2
 environment variables 16-13
 file modification times 16-7
 first target (default) 16-9
 housekeeping target 16-10
 implied target 16-7
 including control files 16-8

macro 16-2
 format 16-4
 sources 16-4
portability 16-11
 preprocessors 16-12
remove stray files 16-10
required files 16-5
shell commands in 16-3
shell variables 16-13
special macros 16-4
SUFFIX declaration 16-2, 16-8
suffix rule 16-2, 16-7
tabs in 16-6
tabs vs. blanks 16-6
target 16-2
target "all" 16-9
target definition 16-5, 16-6
 format 16-5
 platform variance 16-13
 successive commands 16-13
target usage 16-7
use of line continuation character 16-6
variables 16-3

man 4-2
 AFS commands 4-4
man page formatting 4-3
man pages 4-2
 built-in commands 6-2
 directories 9-12
 exit 4-4
 filename option 4-5
 keyword option 4-5
 print 4-4
 quit 4-4
 search for pattern 4-4
 shell commands 6-2
MANPATH variable 9-12, 9-17
Match characters in regular expressions 6-17
Match single character 7-6
Memory corruption 15-26
Memory leaks 15-26
Metacharacters 6-10, 7-5, 9-4, 9-5
MH 12-2
mh 12-2
MIME 9-19
mime.types file 4-8, 9-19
 format 9-20
mkdir 7-22
Mode 7-9
Mode bits 7-24
more 6-13, 6-14, 7-9, 7-11, 7-20
 format 7-10
Mosaic 4-7
Mount point 1-6
Mount tapes 14-2, 14-9
Move a directory 7-23
Move a file 7-12
Multimedia support 9-19
MultiNet 4-11
Multiple commands on a line 6-6
Multipurpose Internet Mail Extensions 9-19
mv 7-12, 7-23, 9-13
 format and options 7-12
mvdir 7-23
 format 7-23

N

nawk 6-16
NEdit 9-3, 10-1, 10-2, 11-6
 commands 10-12
 pros and cons 10-2
NetNews 4-10
Netscape 4-7
Network Information System 9-7
News 4-6
News 4-10
news 4-8
Newsgroups 4-10
Newsreaders 4-10
NFS 9-7
nice 6-19, 13-2
NIS 9-7
 password file 2-6
NIS map 3-3
nn 4-10
noclobber variable 6-11, 6-12, 9-13
noglob variable 7-7
nonKerberized login 3-4
Non-printable characters, in file dump 7-20
nroff 4-3
nu/TPU 9-3, 10-1, 10-2, 11-6
Null device 6-11, 6-13

O

oawk 6-16
obtain printcap 11-7
OCS
 X interface 14-8
OCS 14-2
 X interface 14-7
ocs_allocate 14-4, 14-6
ocs_broken 14-3
ocs_check_label 14-4
ocs_clean_it 14-3
ocs_clean_list 14-3
ocs_deallocate 14-6
ocs_devfile 14-4
ocs_devstat 14-3, 14-5
ocs_dismount 14-6
ocs_init_stat 14-3
ocs_message 14-3
ocs_mrlog 14-3
ocs_pending 14-3
ocs_report_stat 14-3
ocs_request 14-4
ocs_setdev 14-4
ocs_stats 14-3
ocs_tape 14-3, 14-4
od 7-16, 7-20
 format and options 7-20
Online help
 apropos 4-5
 man pages 4-2
 UNIXHelp 4-9
 vendor-provided utilities 4-6
Operator Communications Software (OCS) 14-2

Option passing 15-7

Options 6-5
 grouping 6-5
 separator 6-5
Ordinary files 7-5
Other permission 7-25
Output
 display screen by screen 6-14
Output redirection 6-10, 9-13
 background jobs 6-19
 force overwrite 6-11
 overwrite existing file 6-11
Output, suppress 6-11, 6-13
Overwrite file protection 9-13
Overwrite files 7-5
Owner permission 7-25

P

p 6-7
pack 7-16
pash 8-19
Parent directory 7-5, 7-21
Parent process 6-2, 9-8
Parentheses in commands 6-2
passwd 2-4
passwd file 3-3
Password 2-6
 change 2-6
 NIS 2-6
password 3-3
 changing 2-5
 encrypted connection 2-5
 non-reusable (portal mode) 3-5
 standard UNIX 3-3
Password entry file 5-2
Password file, NIS 2-6
Path 6-9
Path name separator 9-4
PATH variable 5-6, 6-9, 9-12, 9-17
 include dot . 9-12
path variable 6-9, 9-9
Pathname 7-1
 absolute 7-1
 relative 7-1
Pattern, search for 6-15
Pattern-matching characters 9-5
perl 5-7, 15-2, 15-4
Permissions 7-9, 7-24
 AFS 7-24, 8-7
 AFS combination rights 8-7
 change 7-25
 determine current settings 7-24
 directory 7-27
 file access 7-24
 group 7-25
 other 7-25
 owner (user) 7-25
 set when file is created 7-26
Personnel directories 4-11
pine 12-2
 configuration 12-2
 printing configuration 12-5

suggested options 12-4
Pipe output of commands on a line 9-5
Pipeline 6-13
Pipes 4-4, 6-13
Pointers 15-21
portal mode 3-3
 discussion 3-5
 X terminal 2-1
POSIX standards 15-2
Postscript files
 printing duplex 11-6
pr 11-4
Pre-print options 11-4
 a2ps 11-4
 pr 11-4
 psnup 11-4
Prevent interpretation of special characters 6-3
Preview command 6-7
principal 3-6
printcap file 11-7
printenv 9-9
Printing 11-1
 ascii to postscript 11-4
 both sides of paper 11-5
 check queue 11-1
 duplex mode 11-5, 11-6
 fpi 11-1
 kill job 11-1
 postscript files in duplex mode 11-6
 text files in duplex mode 11-6
Printing man page 4-4
Priority 6-19
Process 6-18
 background 6-2, 6-19
 child 6-2, 9-8
 display status 6-2
 fork 6-2
 interrupt 9-1
 move to background 9-2
 parent 6-2, 9-8
 subprocess 6-2
 suspend 9-2
Program execution 15-22
Programming languages 15-2
Programming languages, interpretive 5-7
Programs 6-1
Prompt
 default 5-3
 FNALU 5-3
 shell 5-3
Protection groups
 change owner 8-13
 create 8-15
 in AFS 8-7
 remove 8-15
 show groups by owner 8-12
Protection, file and directory 7-24
ps 5-1, 6-2, 6-20, 7-19
psnup 11-4
pts 8-10
Public domain shells 5-4
purify 15-26
pwd 6-2, 6-11, 6-12, 7-21
Python 15-2, 15-4

Q

Queue, batch (under LSF) 13-2
Quotes
 back 9-4
 double 9-4
 single 9-4
Quoting character (backslash) 6-6, 9-4

R

RBIO 14-2, 15-16
RCS 17-1
Read permission 7-9, 7-14, 7-24
 directory 7-27
 file 7-24
Recall commands 6-6
Redirect output 6-6
 to file and to a command 6-13
Redirection metacharacters 6-10
Redirection of I/O 6-3, 6-10, 6-11, 9-13
 failure 6-12
 force overwrite 6-11
 grouping 6-11, 6-13
 overwrite existing file 6-11
 suppress error 6-11
 suppress output 6-13
Reexecution commands 6-7
 preview 6-7
 substitute 6-7
Reference directories 7-12
Reference files 7-12
Regular expressions 6-3, 6-17, 7-19, 9-5
rehash 5-6, 6-9
Relative pathname 7-1
Remove a directory 7-14, 7-23
Remove a file 7-14
Rename a file 7-12
Replace variable name with value 6-3
Reply address for mail 12-6
Required file 16-1
Restart display 9-2
Restore from archive file 7-14
Retrieve from archive file 7-14
Revision Control System 17-1
RISC-based UNIX systems 15-2
rlogin 8-19
rm 7-14, 7-23
 format and options 7-14
rmdir 7-23
rn 4-10
Root 7-1
Root directory 1-6, 9-4
Run executables from current directory 9-12

S

s 6-7
savehist 6-6
savehist variable 9-16
Scheduling jobs 6-22, 6-23

Screen, clear 9-15
 Script execution 5-7
 Script, shell 5-5
 Scripted command entry 6-1
 Scripts
 as job 6-18
 default shell 5-6
 execution 5-6
 shell 5-1
 source 5-7
 Search engines 4-9
 Search for files 7-17
 Search for pattern 6-15, 6-16, 7-18
 Search on text patterns 6-17
 Search on users 4-11
 Search path 6-9
 add command 6-9
sed 6-17, 15-5
 Separate commands on a line 9-5
 Separator, path name 9-4
set 6-2, 9-8, 9-11
set correct 6-8
set prompt 1-5
setenv 9-9, 11-3
setpath.csh 9-12
setpath.sh 9-12
setup 14-1
sh 5-3, 7-2
 /bin/sh links to ksh 5-2, 5-6, 9-17
 Shell 1-2, 1-3
 default 9-13
 Shell choice 5-3
 Shell command 6-1
 help on 6-2
 platform-specific 6-2
 Shell comparison 5-3
 Shell features 5-3
 Shell functions 9-14
 Shell program 5-3
 Shell prompt 1-5, 5-3
 Shell script execution 5-7
 Shell scripts 5-1, 5-5, 6-1
 affect current shell 5-7
 default shell 5-6
 execution 5-6
 source 5-7
 Shell support policy 5-5
SHELL variable 9-13
 Shell variables 5-4, 9-8
 PS1 variable 1-5
 Shell, current 5-1
 Shells 5-1
 bash 5-3
 Bourne family 5-1
 C family 5-1
 command interpretation 6-3
 completion mechanism 5-4
 csh 5-3
 exit 5-3
 features 5-3
 finding commands 9-12
 interpretive programming language 5-5
 Korn 5-1
 ksh 5-3
 public domain 5-4
 sh 5-3
 start 5-2
 supported 5-5
 tcsh 5-3
 vendor 5-4
 zsh 5-3
shells 5-7, 15-4
 Single back quotes 9-4
 Single quotes 6-3, 7-19, 9-4
 Size of file 7-9
sort 6-13, 6-16
 Sort lines in files 6-16
source 5-7, 6-2, 9-17, 9-18
 Special characters 7-5, 7-19, 9-4, 9-5
 extended set 6-18
 prevent interpretation 6-3
 Special keys 9-1
 Special symbols 6-17
 Specify terminal type 9-5
 Standard error 6-10, 6-11
 Standard input 6-10, 6-11
 get from stdio of previous command 6-13
 Standard output 6-10, 6-11
 connect to stdin of next command 6-13
 Start a shell 5-2
 Start display 9-2
start key 9-2
stderr 6-10, 15-17
stdin 6-10, 15-17
stdout 6-10, 15-17, 15-22
stop 6-20, 6-21
 Stop terminal output 9-2
 Stopped jobs 3-7, 6-20
 Store to archive file 7-14
 Storing temporary files 7-28
 strengthened machine
 connection from untrusted machine 3-5, 3-6
 logging on via portal mode 3-5
 String, literal interpretation 9-4
stty 2-3, 6-20, 9-2, 9-6
 ^ 9-7
 > 9-7
 tostop 6-20
 Subprocess 6-2
 Subshell 5-2
 Substitute output for string 9-4
 Substitute string in command 6-7
 Suffix declaration 16-2
 Suffix rule 16-2
 Support policy for shells 5-5
 Supported shells 5-5
 Suspend process 9-2
 Suspended jobs 6-20
 Symbolic link 7-13
 System calls 6-1
 Systems updates 4-10

T

Tabs 9-2
tabs 9-2
tail 7-9, 7-10
 format and options 7-10

Tape drive
 allocate 14-2
 manipulate 14-7
 mount request 14-2, 14-9
 use statistics 14-2
 view mount requests 14-8
Tape I/O packages 14-2
Tape mount 14-2, 14-9
Tapes
 operator assisted mounts 14-2
tar 7-14
tar command 7-14
Tar files 7-16
Target 16-1, 16-2
Tcl/Tk 15-4
tcsch 5-3
tee 6-13
telnet 4-6, 8-19
Temporary disk 7-28
term variable 9-9
Terminal control functions 9-1
 set 9-6
Terminal output, stop 9-2
Terminal settings
 display 9-2
Terminal type
 specify 9-5
Terminate processes at logout 3-7
Text patterns
 search on 6-17
Tilde 7-2, 9-11, 15-16
Tk 15-2, 15-4
TMPDIR variable 7-28
Token
 destroy 8-4
tokens 8-4
tostop 6-20
trn 4-10
Type ahead 6-6

U

UCM 17-1
umask 7-26
Universal Resource Locator 4-8
UNIX
 logging on at console 3-3
 login program (standard) 3-3
UNIX cluster 9-7
UNIX Code Management 17-1
UNIX password 3-3
UNIX process, environment 9-8
UNIX prompt 1-5, 5-3
UNIX Reference Desk 4-9
UNIX shell 9-8
UNIXHelp 4-9
unlog 8-4
unset 9-8, 9-10
Updating files 16-1
UPS products
 tape mounting and I/O 14-1
URL 4-8
Usenet News 4-10

user variable 9-9
Users, information on 4-11, 4-12

V

Variable name replacement 6-3
Variable types 15-20
Variables
 Bourne shell family 9-10
 C shell family 9-8
 define in Bourne shell 9-10
 delete 9-8
 display value 9-9
 environment 9-8, 9-9
 shell 5-4, 9-8
 unset 9-8
Vendor shells 5-4
Vendor-provided online help 4-6
Version control system 17-1
Versions of files 7-5
vi 6-8, 6-17, 9-3, 10-1, 10-2, 11-6
 commands 10-3
 pros and cons 10-2

W

we 7-16, 7-19
Web Browsers 4-7
Web site 4-8
whatis 4-5
where 15-23
which 7-4
White space 6-5
 in command interpretation 6-3
who 4-12, 6-11, 6-12, 6-13, 7-19
who am i 4-12
Wildcard replacement 6-3
Wildcards 6-17, 9-5
Working directory 7-1
World Wide Web 4-7
Write permission 7-9, 7-14, 7-24
 directory 7-27
 file 7-24
WWW 4-6, 4-7
 addresses 4-8
 AFS permissions for Web pages 4-9, 8-9
 browser commands 4-10
 browsers 4-7
 create Web page 4-9
 directories 4-11
 file 4-8
 ftp 4-8
 gopher 4-8
 HTML files 4-7, 4-9
 http addresses 4-8
 links 4-8, 4-9
 mailto 4-8
 news 4-8
 newsgroups 4-10
 protocol 4-8
 search engines 4-9
 UNIX Reference Desk 4-9

UNIXHelp 4-9
URL 4-8, 4-9
www 4-7, 9-19
WWW Browsers 4-7
lynx 4-7
mosaic 4-7
netscape 4-7
www 4-7
WWW directories 4-11

X

X display
DISPLAY variable 10-2
X terminal 2-1
X windows applications
DISPLAY variable 9-11
X11 toolkit
Tk 15-4
X-based browser commands 4-10
xemacs 10-4
commands 10-9
file extension-language map 10-6
initialization file 10-6
oo-Browser 10-9
pros and cons 10-2
xlf 15-5
xocs 14-7
xrn 4-10
xtapeview 14-8

Y

yacc 15-5
Yellow pages 9-7
ypmatch 5-2
yppasswd 2-6

Z

zsh 5-3

